

# AMSynths

## **AM8319 Diode Ring VCF User Manual Low and High Pass Filter**

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## Contents

- 1. Welcome**
- 2. Front Panel**
- 3. Module Description**
- 4. Connections & Controls**
- 5. Setup**
- 6. Warranty & Support**
- 7. Specifications**

# AM8319 Diode Ring VCF

## 1 Welcome

Thank you for purchasing an AMSynths product.

The AM8319 analog filter module has been designed and hand built in the UK to exacting quality standards. The module uses high quality electronic components and particular attention has been paid to the quality of the audio signal path, stability of the control circuits and the long term life of the product.

This user manual explains the basic functions of the module, as well the historic background to its development, how to install the module and the warranty and support.

AMSynths modules are produced in low volumes, with each module having a unique holographic serial number and a certificate of ownership. You own a rare and beautiful analog synthesizer module that will provide many years of amazing sounds and musical inspiration.

Rob Keeble  
Owner & Designer  
AMSynths  
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# AM8319 Diode Ring VCF

## 2 Front Panel



### AUDIO INPUTS:

InA, InB

### CONTROL INPUTS:

CV1, CV2

### AUDIO OUTPUTS:

Out

### CONTROL POTS:

Frequency (blue)

Peak (red)

Signal A (white)

CV1 (yellow)

### PUSH BUTTON:

Filter Mode

The serial number is on a small silver holographic sticker on the inside of the front panel.

# AM8319 Diode Ring VCF

## 3 Module Description

The AM8319 has at its core a diode ring that uses the original (and now obsolete) CA3019 diode array chip. This provides both a 12dB low pass filter mode as well as 6dB high pass mode, and a front panel push button switches between the two modes.

The filter has two signal inputs, one that can be controlled in level by the SignalA control potentiometer and one that goes straight to the filter core.

The Frequency can be controlled via the larger 20mm diameter front panel knob and via a direct CV signal and a level controlled CV signal. The resonance of the filter can be varied by the Peak control and the filter will oscillate at maximum settings.

The AM8319 is based on the VCF in the Korg MS-50 but with the addition of a High Pass mode as well as the usual Low Pass mode. This filter has a different character to the usual Moog ladders and smooth OTA filters from Roland, very useful for harder edged and industrial soundscapes.

The AM8319 uses a diode ring as the basis for its sound. This has a lot of benefits in terms of producing a unique and raw sound. However it does have a down side. When the frequency cutoff is fully cutoff at either HP or LP mode you may hear noise from the filter and the CV rejection can be poor.

# AM8319 Diode Ring VCF

## 4 Connections & Controls

The two uppermost jack sockets INA and INB are for connecting audio signals into the input side of the filter, these signals are mixed together. The level of INA can be varied from nil to maximum using the front panel rotary potentiometers SignalA.

The middle jack sockets CV1 and CV2 are for connecting modulation control voltages into the filter. These signals vary the cut off frequency of the filter, with the front panel rotary potentiometer adjusting the amount of modulation from CV1.

The lowest jack socket marked Out is the audio signal output of the filter and it is typically connected to a VCA.

The Frequency potentiometer varies the cut off frequency of the filter. At the minimum setting the filter will cut off all frequencies with no audio output and at the maximum setting the filter will pass all frequencies.

The Peak potentiometer adjusts the resonant peak of the filter from a minimum setting of no resonance, through subtle resonance enhancement to a maximum setting when the filter will break into self oscillation.

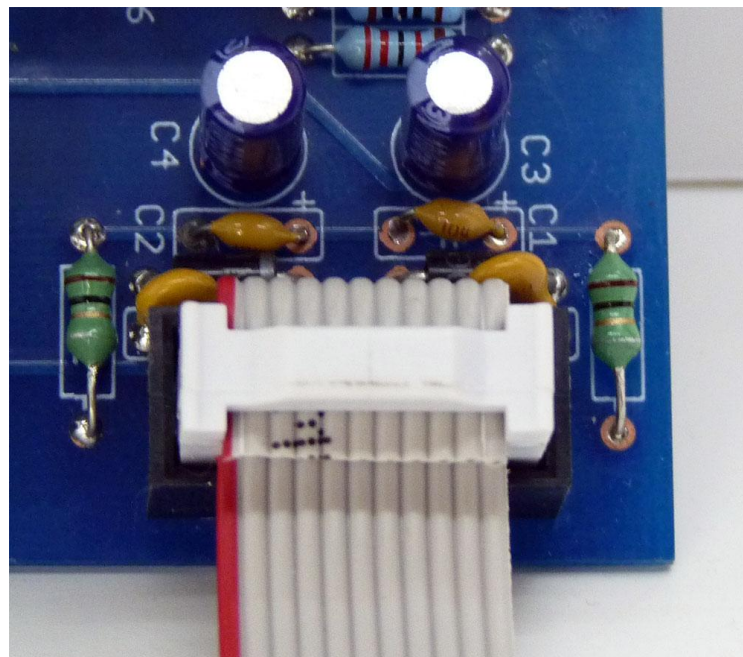
The mode of the filter can be switched between High Pass (HP) and Low Pass (LP) using the Red latching push button. When pushed in the filter is in LP mode, and when pushed out it is in HP mode.

# AM8319 Diode Ring VCF

## 5 Setup

The AM8319 module occupies 12HP of EuroRack space and is fully compatible with various Euro Rack cases, especially Doepfer. The height of the panel is 128.5 mm and there are four mounting holes at each corner of the module. Four 3mm diameter mounting screws are included with the AM8319 to enable you to securely mount the module into your rack.

The module should be connected to the 12V Doepfer style power bus within your case using the included AMSynths multi-way power cable. Ensure the power is OFF before connecting the module and BE VERY CAREFUL to ensure that the power connector to the bus is connected with the red stripe of the cable lined up with -12V (negative 12V). This is standard Euro Rack power connection but be VERY CAREFUL to get this right! Damaged modules will not be replaced under warranty when the power has been misconnected. The power socket on the AMSynths module is keyed so that the cable can only be inserted the correct way.



# AM8319 Diode Ring VCF

## 6 Warranty & Support

Repairs resulting from a defect of the module or its construction process are covered by a one year warranty, with the customer paying transit costs to AMSynths in the UK.

Damage to the module resulting from incorrect power supply voltages, backwards power cable connection, abusive usage, fluid encroachment or out-of specification voltage input are not covered by the warranty and normal service rates apply.

AMSynths implies and accepts no responsibility for undesirable harm to a person or apparatus caused through operation of this device.

If you have questions regarding the use of this module or you need technical support please contact AMSynths via email at [sales@amsynths.co.uk](mailto:sales@amsynths.co.uk).

# AM8319 Diode Ring VCF

## 7 Specifications

Power Supply:

+12V, GND and -12V standard Doepfer 10 pin connector  
RED stripe on power cable is -12V (NEGATIVE 12V)

Current consumption:

20mA on both +12V and -12V rails.

Dimensions:

128.5mm (Height) x 60.6 mm (Width)

Euro Rack Size:

12HP/TE

Panel:

2mm machined aluminum with colour photographic print.

Frequency

20 Hz to 20 kHz

Resonance

0 to self oscillation

Output Impedance:

1k ohm

Input Impedance:

100k ohm